

Enhanced Laser Printing *ELP*

Introduction and Installation Guide

Revision 8.44 © seit 2001

For

MS Windows NT based platforms
Unix, Linux, Solaris, VMS, True64,
AS/400 and AIX
As firmware extension for various laser printer

Quick Install Guide for Microsoft Windows

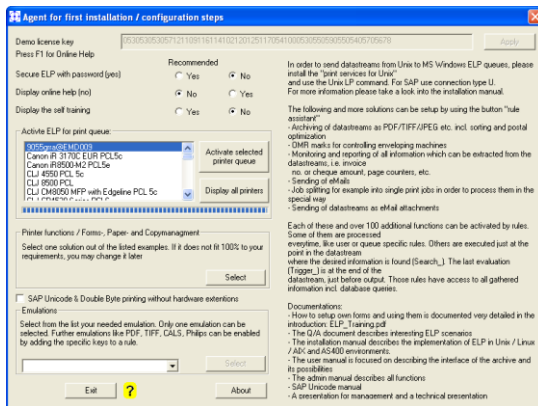
1. On a Windows NT, 2000, 2003, XP, Vista, Win7, 2008 system, logon with administrator rights and double-click the provided *Setup_WELP.msi* file to start the installation wizard.
For cluster see the special instructions.

Important notes:

- A) You need to have administrator rights in order to install the software
- B) Network users need to give all users the read permissions to the installation directory, and read/write permissions to the forms directory.

The wizard will guide you through the installation: accept our license agreement and choose the appropriate installation directory.

2. In most cases you need a PCL 5 driver (NOT PCL 6) for our software. Please install one. Maybe you name the queue ELP.
3. If you also want to generate forms for overlaying or attaching them, it is recommended to install a second queue, where the port is FILE. Maybe name it ELP_FORMS. IMPORTANT: This queue is NOT activated later!
4. After copying the required files and registering, a dos shell will appear for some few seconds and disappear if no errors occur. If there are complications, the dos prompt will halt and an error message appears. Please report any installation errors to your distributor, mentioning the message occurred on the display.
5. If no error message appears, the installation successfully finished. By clicking the 'Finish' button, the installation application ends.
6. Now go to 'Start' -> 'Programs' and find the entry '*Enhanced Laser Printing ELP*', where you can select either extensive documentation or the '*PPAdmin Control Centre*' program.
7. Start the *PPAdmin* program and as always for the first time, the "startup agent" is popping up. If you did mark on the WEB form that you like to get a demo key and you did enter your valid email address, you can now enter in the first field the provided time bombed license. The click No – No – No.



8. Finally activate your PCL 5 print queue, which you might have installed as described above. W-ELP directly asks to print a demo file and tells you some more information what is already enabled. We recommend to use the first sample file, which is already marked.
9. If you like, you can directly turn an emulation on, set Unicode printing for Sap or just select one of the 50 printer function, form-, Page- and Copy-handling examples.

It is strongly suggested to configure the email software: Blat. This will enable the print processor to send out notification mails on any detected problems while processing print jobs. See later in this manual.

Quick test: Printing out Microsoft Word

Load provided example "Invoice" using the Start Menu and print it using a PCL 5e or 5c Printer driver.

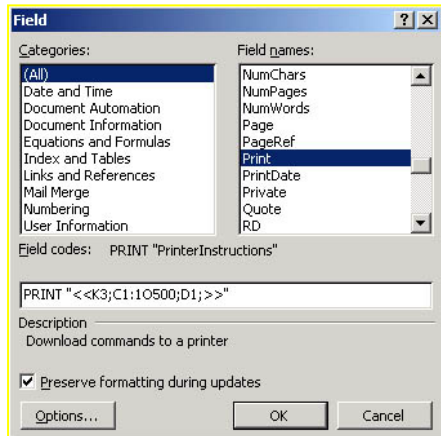
You may want to generate your own Microsoft Word, using Forms and *ELP*-Commands: Create a new empty document, type some sample text ('e.g. 'this is a welpprint sample test') and follow these steps to print a test form.

1. First, enable field code to be seen. Go to 'Tools' -> 'Options'; in the 'View' tab, enable checkbox 'Field codes'.

2. Go to 'Insert' -> 'Field' and select the *Print* command (Windows 97: German Druck) in the left list box ('Field Names').

3. In the text box below (after 'PRINT'), enter: "<<K3;C1:1O500;D1;>>"

4. Now, if you select 'File' -> 'Print', the print dialog appears and you must select a printer. Be sure to select a PCL 5e printer, which has the processor *welpprint* configured; otherwise, the form won't be applied to the document.



5. The result should be three pages with your sample text combined with a *W-ELP* example form/watermark
6. To create your own form/watermark, just design an appropriate image (Photoshop, etc.) or layout (Microsoft Word, etc.) and print it to a file (should have the suffix **.prn**).
7. Open *PPAdmin* and push the 'Add' button in the 'Macros' tab. A file dialog appears and you may select the created **.prn** file. Give it a number between 1000 and 32000, for example 1500. Now, it'll appear in the List box as **1500.mac**.
8. Follow steps 2 to 5 and substitute the [..]O500[..] with [..]O1500[..] (your generated MAC file): "<<K3;C1:1O1500;D1;>>"; printing it should result in the customized form/watermark to be applied.

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Contact and support address

Please open the PPAdmin software -> License Tab -> about, or start the convert.exe software without any argument.

Limited Warranty

To the original purchaser, the manufacturer warrants the data store medium and the hardware module (if applicable) like flash memory card or appliance to be free of defects in materials and faulty workmanship for a period of ninety (90) days from the date the software is delivered. If during this period a defect in the data store medium and/or the hardware module should occur, you may return the product with a copy of your receipt or other proof of payment to the manufacturer or to an authorised distributor, and the manufacturer/distributor will replace it without charge. Your sole and exclusive remedy in the event of a defect is expressly limited to replacement of the data store medium and/or the hardware module as provided above.

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Introduction

The Enhanced Laser Printing Print Server Processor (*ELP*) is a software tool based mainly upon PCL 5 and with some restrictions also on Postscript data streams. PCL is Hewlett-Packards Printer Command Language which is used by nearly all Laser and Business InkJets printer. The *ELP* implementation does follow as much as possible industry standards. The available functions are printing:

- All known 1D barcodes plus the 2D code: PDF 417 and UPS Maxicode in PCL and Postscript, as well as Data Matrix in PCL only.
- A Kyocera Prescribe Emulation for their way of barcode printing
- Electronic Forms, with de- / encryption of forms and data streams, as well as compressing data streams (Decompression and decryption in the printer using an ELP Firmware extension stored on a memory flash module.
- Including reprints with additional forms and paper path settings
- Accounting, print verification and reporting; Job ticketing
- Additional Fonts (Unicode), HexEmulation, Epson FX Emulation, PPDS, VGL, TIFF, CALS, Prescribe, etc.
- emailing and faxes, Database researches.
- Automatic emails and converting into Acrobat™ PDF Format
- PDF direct printing to Postscript printers, or Postscript to PCL
- Monitored printing, error recovery and user information

Intelligent trigger routines enable any product function on demand. In addition, *ELP* also provides a simple way to change or erase any data stream code.

The software can be installed on the following operating systems:

- MS NT based Windows systems. Because *ELP* does use only a printer queue, the print data can be received from any platform to be sent to any platform.
- Any Unix or Linux platform handling print files and/or installed as a pipe directly in the LPR command using STDIN/OUT methods.
- AIX and Solaris, usage like Unix
- AS/400 (with some limitations)
- VMS
- DOS or as sources in your application

ELP functions overview

Basic *ELP* functions:

- Easy generation and activation of macros / forms / logos etc out of print files (prn), and insert them on demand in data stream by searching for the macro PCL sequences.
- Search and add/insert or replace any text or any command, in any data stream. This functionality can be used for example to insert forms on demand.
- Setting the printer to EconoMode
- Allow only gray printing on HP colour devices
- Allow only printing from certain applications etc.
- Tray mapping

1D Barcode

- Intelligent barcodes emulation which supports even more 1D barcodes than the JetMobile^(TM) BarDIMM.
- FreeEscape support.
- OMR support for inserting letters into envelopes, postal optimisation.
- PCL and Postscript

2D Barcode: PDF417 Barcode, Datamatrix and UPS MaxicodeTM

ELP Functions

- Enabling all *ELP* commands like reprinting, copy and page definitions etc.
- Trigger those functions using infile TRIGGER_...keys
- Report Line Generator

Epson Emulation FX 100 9 Needle

Proprinter / PPDS Emulation

VGL Emulation

PGL Emulation

IGP10 Emulation

Prescribe Emulation

- Those emulations are developed for customers, they are not a 100% emulation. But on request and problems we can always add missing functions or correct any problem.

TIFF printing and CALS Emulation.

PDF Converter

- Converts on request print files to Adobe Acrobat PDF format and send it to the archive or *ELP* is using SNMT communication to send the data as an email to any address.
- The PCL5/PCL6/TIFF to PDF converter is optional and is licensed per server.

email Function

- Sending fully automatic emails to any address, found in the data stream. If the PDF converter is available as PDF attachment.
- Using trigger functions, you can define any subject and body text, for example to differentiate between for example orders or invoices, or languages German or English etc.

Fax Function (pretty similar to email.)

PCL Compression 8: Realises the conversion from PCL Compression Mode 8 to 5.

Archiving and MyPrintArchive

- Sends print files into an archive directory, optional in Adobes PDF format.
- *PPAdmin* provides a search and view/email/print function
- *ELP* writes an HPS index file, so data can be sent to any global archive system with automatic indexing.
- Uses user defined file names for archiving
- Reload automatically archived jobs and print and delete them
- MyPrintArchive stores all jobs from a user/searched item etc. send to a specific queue and on demand resend them to any printer

Accounting

- Records into a text (CSV format) or DBase file all print job, page size, from whom, when etc, including collected document information's like check numbers etc.
- With Monitored printing also the true page counters are stored for real print cost calculation.

Monitored printing

- Send data streams direct to IP connected printers and monitor the print job. On printer error send a user notification and start recovery actions.

Variable management

- User name, time, day, week, etc. can be used on any page.
- External files can be used to search for any place holder, which are replaced by the value.
- *ELP* can setup its own item counters, as well page counters.

Distributed printing, page

- Send data stream to different ports, queues or archives.
Depending upon: Copy factors or file size.
- Call any other software or communication tool and read back data
- Split a print job, for example to archive each invoice
- Send Data to any external software, including own defined command line parameters

Symbol set conversion

- For example to EBCDIC to ASCII.

Unicode and double byte printing

- Prints Unicode and double byte fonts (e.g. simplified or traditional Chinese) on non Unicode or double .byte fonts enabled printers

Miscellaneous

- Reverse printing.
- Print colour jobs optional on HP printers only in gray scale.
- Set toner save mode.
- Do not print at all, maybe print streams from software the user is not allowed to use
- The data stream is analysed and will be sent to the best fit paper roll.

Requirements

Data Stream format:	PCL 5e (HP LaserJet), PCL 5C Postscript with some limitations PCL3GUI (HP Business InkJet) with some limitations for accounting all data formats PCL 5e or Postscript for Bar-coding
Hardware DIMM:	The DIMM is available for HP LaserJet printer series: 2300, 4050, 4100, 4200, 4300, 4600, 8100, 8150 and 9000.
Hardware MFC:	The memory flash card is available for HP LaserJet printer series: 2400, 4250, 4350, 4650, 5550, 9050, 9040 others on request.
Hardware USB:	The memory flash USB sticks available for HP LaserJet printer series: P3005, 3505, M5035 and most newer HP printers.
Software version:	Windows NT, 2000 or XP for Print Processor installation Also recommended to be installed for Unix forms development and testing. Software version for Unix, Linux, AIX, VMS or Solaris if needed to be installed on those systems.

ELP will only need system performance, when a print job is parsed.

Tests have been made in order to analyse the CPU workload and performance:
A typical job with 270 Kbytes incoming data, needed to load a Form with 100K, generates a barcode and write the process into accounting file needs less then one second to be processed.

The same time was needed to pass through a 1.5 MB file without any changes.

The demo version

The limitations of the demo version are:

1. Every Barcode is printed with the word DEMO on
2. On every PCL5 print page the DEMO watermark is printed

3. Before the job is processed, you need to click OK in a demo message box on the server, which runs the *ELP* Software.

Installation and testing

This chapter explains

1. How to install the *ELP* either as a Hardware DIMM in a HP LaserJet or on the various provided operating systems.
2. At the end of each product chapters, how to test the functionality.

If you have a

DIMM /MFC Card	continue reading
Unix/Linux/AIX/VMS	continue on page 19
Windows NT/2000/XP	continue on page 23

Hardware DIMM / MFC / USB Stick / Harddisks for HP LaserJet printers

Please read the full chapter up to the end, especially the statement in the key `ELP_MAX_HEAP` influence of the requested printer memory.

Note some functions like Archiving, distributed printing and time functions are not supported on the DIMM or MFC (Memory Flash Card) implementation of *ELP*. In order to implement *ELP* into your environment, it could be a good idea to emulate first a DIMM using the Windows or Unix based version. In this case please add to the command line the parameter `-p7` surrounded by blanks. Or set the DIMM MODE option in PPAdmin's Admin Tab and APPLY the settings. In order to make them work, exit PPAdmin and restart it.

Note: In very rare cases, the DIMM may cause problems with bidirectional communication between the printer and the host. This does not affect Windows printing. Only if the host opens a job tracking communication.

The DIMM / MFC / etc. version does not support the following status read back Escape sequences: `Esc*s#X`, `Esc*s#I`, `Esc*s#U`, `Esc*s#T`, `Esc*s#M`. The good thing about that is, that we have never seen them being used by any type of software.

Software Installation

Using the MS Windows file manager, please copy the content of the Floppy Disk into any Directory of your system. You only need *PPAdmin* if you want to

- create forms download forms to the module,
- in order to exchange the ini-file, or
- to create and test the ini-file(s) before downloading.

Especially for the testing it is recommended to set the ELP functionality of the MS Windows version into the DIMM mode. Therefore start PPAdmin, open the Administration register and mark the “DIMM Mode”. Click on Apply, exit and restart PPadmin. From now on, the windows ELP system will ignore all functions which are NOT available in the DIMM version.

Finally we recommend to add the key PCLPreciseMode into the section GLOBAL of the ini-file and turn it on.

MFC / DIMM / USB Stick Installation

Before you are going to install the module, check for proper version for your printer. Each printer version like 4050, 4100 or 9000 does need its own particular firmware DIMM. The version is printed on the module and on the shipping box.

Your HP LaserJet has three or four DIMM (Dual Inline Memory Module) slots. The module can be installed in any of these slots.

Protecting the SIMM / DIMM Board

SIMM/DIMM boards can easily be damaged by small amounts of static electricity. To remove any static electricity from your body:

Touch the surface of the antistatic package before removing the board from its package. When handling the board, frequently touch bare metal on the printer or the antistatic bag or wear an antistatic wrist strap.

Avoid moving about the work area to prevent generating static electricity. Handle the board carefully at all the times. Avoid flexing it or touching its components. When removing a board from the antistatic package, avoid touching the metal traces on the SIMM/DIMM board. Hazardous voltages are present in the printer. Never remove any access cover or work near exposed electrical parts while the power cord is connected.

The *ELP* DIMM board has to be installed exactly like a RAM board. Please follow the SIMM/DIMM module installation procedure detailed in the HP Printers User's Manual.

The DIMM / MFC etc. is a PCL firmware. Therefore it can not be installed in the printer together with another PCL personality as a conflict would then occur. Such PCL personalities like E-Form or secured MICR products.

Update the DIMM / MFC / Stick module

Simply copy the provided file to the printer:

MS Windows based systems:

A printer directly connected to the PC:

```
copy /b UpdateFileName.ext lpt1
```

Using a windows printer queue:

```
copy /b FileName.ext \\ServerName\PrinterReleaseName
```

The server name can be found using *PPAdmin*'s licence tab.

The PrinterReleaseName is displayed in the printer properties, tab release.

Using the FTP file transfer for network connected printers. In MS DOS command prompt type:

```
FTP connect IP-addressOfPrinter
```

```
binary
```

```
put FullPathAndNameOf UpdateFile.ext
```

```
bye
```

Using the LPR command

```
LPR -S IP-Address -P PrinterQueueName -o UpdateFilename
```

UNIX bases systems: Use the LP command:

Test the module

Besides sending one of our demo files to the printer, there is a quick way to check the functionality of the DIMM, the printer's configuration page.

1. Select the configurations menu
2. Select the configuration page
3. Press select

At the middle of the first page, the "Installed Personalities and Options" are listed. The product is working when an IOF entry is listed, which displays the *ELP* version. IOF 254(-): ELP(active) (datecode) Version © 1999-2008....

You may also open the new HP printers web page and will find the same line at the configuration page.

For the second test method, send one of the provided demo files to the printer. See page 38 for the file description, and the previous page chapter for the methods to send the files to the printer.

Echo-ing the printer and get ELP version back. (Version 8.26)

The activated filter does parse all incoming data streams. In order to get the information back from the printer, maybe using any distribution tool, send the following data stream to the printer:

```
esc%-12345X@PJL ECHO Get ELP Version  
esc%-12345X
```

The activated ELP does change that request in a way, that the printer will return ECHO ELP Vx.x.

Meaning if the original ECHO Argument comes back from the printer, no ELP is active or installed. If the printer returns ECHO ELP V... you even have then the ELP version running on the printer or in the box.

LaserJet initialisation or automatic data stream

Most newer ELP firmware extension modules for HP LaserJets do have the ability to send every time the printer boots a file to the print engine, just once. For that purpose any print file called PrinterInit.prn can be stored into the 0:\convert directory or into the first directory ELP will find at boot on a convert.ini file on volume 0 to 5.

Special Ini-File keys:

The following 2 keys are only valid in the LaserJet Implementation.

Ini-File Key	Description
LJ_PARSE_PCL6	Key only used by HP's ELP Printer firmwasre extention in DIMM/MFC/USB/SD/Harddisk version to parse also PCL XL data streams
LJ_PARSE_Postscript	Key only used by HP's ELP Printer firmwasre extention in DIMM/MFC/USB/SD/Harddisk version to parse also Postscript data streams
LJ_Mode_TimeOut	Only valid if found in section [GLOBAL] This key may change the time out behaviour of the printer in printing mode using the parallel port (centronics). Please ask the distributor for details. Especially when not all pages are printed, and the rest of the first job is printed on arrival of the next job, try to solve this problem by setting the keys value to 1.
LJ_Mode_OverRead_EOF	DIMM only version_: Can only be turned on in a Searched_... section. Once set, ELP will not exit on a found UEL command.
ELP_MAX_HEAP	Maximum Memory which can be used by the printer filter. Default 1MB, can maybe extended to 1.5 MB or a little more, depending on the printers total memory. If there was too many memory allocated, the printer will hang with a 49.5001 printer error.

AP-ELP Boxes

There are two external print boxes available, one which can print from Lan2Lan or from Lan2USB and another larger one, which can handle up to 4 Lan2USB and 52 Lan2Lan connections.

The boxes do operate the same as the printers, but have both a web based interface to be configured. The special ini-file keys mentioned above do not apply, but the rest does. Even the rule assignment by port is possible.

UNIX, Linux, Aix, Solaris, VMS

Note: The distributed, PDF and time functions are not (yet) supported.

Compilation of the sources

The compiled version can be downloaded from the manufacturer's home page, or supplied by the distributors. Just in case, you are using an unsupported operating system, here are the steps to compile the sources:

1. Copy all provided source files into any directory of your work station.
2. All file names must be in lower case! Use "chmod 777 lower.bat" in order to be able to execute a small shell script, which converts all files from upper to lower case.
3. Be sure, that the first code lines in `definit.h` and `convert.exe` the command `#define copy_unix` is NOT surrounded by `/*` and `*/`.
4. In order to compile the sources you need a full ANSI C compiler. The kernel compiler for HP UNIX work stations is NOT a full C compiler!

Compile and link `convert.c` and `barcode.c` in one command line like this:
cc convert.c barcode.c

The result is usually a file called `a.out`. Maybe you want to rename it to `elp_convert`.

Maybe you need to add a unique outfilename to the command line.
cc convert.c barcode.c /out:elp_convert

5. Finally use "chmod 777 elp_convert" in order to make the file executable.

Use and test the *ELP* program

The *ELP* software must/can be used with the command syntax described later in this chapter .

Important: Please do not use any blanks in the Arguments

.

However, there is a way to pass an argument including the blanks to the *ELP* program, simply set the blanks in the argument in double quotes. The above sample then will be like this: "-d/program files"

The next line describes all possible program call arguments. bc_convert is the name for the executable file:

bc_convert IN_DATA OUT_DATA [-dWorkingDirectory] [-eDefaultElpFile] [-o[i|o]] [-cIniFile] [-p1PrinterName] [-g#] [-p2MachineName] [-p3UserName] [-p4DocumentName] [-p5TotalPages] [-MeMailSW]

IN A) Filename of incoming PCL 5 print stream, including path,
 or
 B) STDIN This special "file name" name will advise the *ELP*
 software that the incoming data is processed
 through the STDIO input.

OUT A) Filename including path of the *ELP* output data, or
 B) STDOUT This special "file name" advises the *ELP*
 software to dump the data to the stdio output.

-cIniFile -c followed directly with a full path plus file name of the
 converter 's command file name. This file defines a huge range
 of additional *ELP* commands, like triggers.

p1 to p4 Arguments If those arguments are provided, they will be documented in
 the accounting module, see page 118.

p1NameOfThePrinter

p2NameOf the Workstation/Server or PC

p3NameOfTheUser

p4Document description.

IMPORTANT:

See blank statement at the beginning of this chapter!

-p5TotalPages If provided, it will be also documented by the accounting
 module, but for PCL 5 data streams, the number is verified by
 Form feed counting.

-p9Port TCP/IP number or port expression of the windows printer
 driver. (Not supported under pure NT 4.0 and Unix)

-MeMailSWPath Enter the full path and program call for the BLAT email
 software. (Not supported under Unix)

-FPdfSWPath Enter the full path and program call for the Lincoln PCL to
 Adobe Acrobat Reader, PDF format, converter. (Not supported
 under Unix)

- q0ShareName Printer share name, mainly for MS windows in order to resend the same job to the same queue using the variable #PCNAME#/#PRINTERSHARENAME#
(Not supported under NT 4.0 and unix)
- q1DriverName Also mainly for MS windows to setup triggered rules which belong for all activated printers, using a special driver. The command line option is stored into the variable #PRINTERDRIVERNAME#
(Not supported under NT 4.0 and Unix)
- q3DebugFile Full path and file name of debug file. If no Slash (unix) or Back-Slash (Windows) is provided then log_file.txt is used in the working directory path. To change the name there use log_mode_filename key in the ini-file.
- q7HostName in most cases the same as -p2, but without the leading \\. The -p2 is taken from the job definition, so in are cases the variable does not include the host name, but the IP address. So this variable does hold certainly the Host name, without leading \\!
- q8 Unix/Linux only. If the -d parameter is set and the data is passé din via STDIN, ELP will first read all data in and store into a temporary file. This method needs to be set, if PreParsing the data streams is needed.
- r1 Windows: Location field content of the windows queue description
- r2 Windows: Comment field content of the windows queue description
- r3 User name in ELP's Unicode coding

All the following arguments are all optional and should not be used in the command line, because they can be defined as well in the ini-file.

- dWorkingDirectory -d followed directly with a full directory path advises the *ELP* software, where to look for the macro files.
- o Same command as INI-file DEBUG_INDATA and DEBUG_OUTDATA commands, which should be preferably used.

This parameter is used for archiving print files, or simply for input and output data caption. Note: Can only be used, when `-d` command is given as well. This parameter will generate up to two files: `in_data.prn` and `out_data.prn` are produced in the WorkingDirectory.

The out file can be used to send the data to an additional device, like an archive system.

Options: `-oi` stores only the incoming data
 `-oo` stores only the outgoing data
 `-o` stores both data streams

`-eElpCommandFile` Note: The ini-file does replace this old command.
 `-e` followed directly with a full path and file name of the *ELP* command file name advises the program to process every print file according the *ELP* commands in this file.

`-g#` The positive number stands for the DEBUG Mode. As this mode is usually set in the ini file using the key `LOG_MODE` the only interesting number here is `-g20`. This number will document only on the Windows platform the processing speed of the filter. The needed speed time is recorded in the file `log_file.txt` in the forms directory.
 IMPORTANT NOTE: `-g` must be AFTER the `-d` parameter!
 Note: If an virus scanner is running which monitors file access, the system may result in very slow printing.

Examples for program calls:

```
convert INfile.tmp OUTfile.prn
convert STDIN STDOUT < INfile.tmp > OUTfile.prn
convert $1 STDOUT -d/home/user/ELP-dir | LP .....
```

The first 2 examples used on an UNIX platform, perform exactly the same action.

For test purposes, use some of the demo files described later in this manual.

Using the `/etc/printcap`

Using the old `printcap` method for printing, a definition in the `/etc/printcap` could look like that:

```
ps44re:\
:cm=lpdfilter method=auto color=no:\
:rm=ps44:\
:rp=AUTO:\
```

```
:sd=/var/spool/lpd/ps44re:\n:lf=/var/spool/lpd/ps44re/log:\n:af=/var/spool/lpd/ps44re/acct:\n:if=/opt/elp/filter:\n:ar:force_localhost@:\n:tr=:cl:l̄k:sh:
```

Ps44re is the printet name and ps44 its host name. the shell script filter will contain the elp command using STDIn and STDOUT.

Using Common Unix Printing System CUPS

There are 2 ways to run *ELP* under CUPS.

1. As a Filter, like an PPDS which is a little more complex
2. As an Interface script

1. ELP Integration into CUPS using the Filter method.

ELP can also be installed as a filter into the CUPS environment. There can be found excellent manuals on the internet for this purposes. Here is the short reference:.

1. Please extract the provided zip file to this directory: /usr/lib/cups/elp
Take care about the access settings using chmod for the complete directory reading, writing, creating and erase.
2. If needed store a new "convert.ini" in the directory
3. Create a file "ELPToPCL" under /usr/lib/cups/filter with this content:

```
#!/bin/sh
set -x
[ -n "$6" ] && exec <"$6"
/usr/lib/cups/elp/elp.Linux_smp STDIN STDOUT -
d/usr/lib/cups/elp -c/usr/lib/cups/elp/convert.ini
```

Note: The last 2 lines here are actually one line.

4. Create file "my.types" at /etc/cups with the content "application/elp"
The "my" is subject to be changed, the extension ".types" is a must
5. Create any printer
6. Edit this printer setting at /etc/cups/ppd and include the line
*cupsFilter: "application/elp 0 ELPToPCL"
7. Rename this printer in any name, which is not predefined in cups e.g "ELP.ppd"
8. Create a new printer in CUPS using "raw" printing. This means without a driver
9. If CUPS would print now, cups will check in any case at /etc/cups/ppd if an associated driver could be found. Example the name is "Testprinter" the CUPS checks for a driver in "/etc/cups/ppd/ names "Testprinter.ppd".

So change into the directory /etc/cups/ppd and creat a "Link" with
"ln -s /etc/cups/ppd/ELP.ppd /etc/cups/ppd/Testprinter.ppd"

Result

```
drwxr-xr-x 2 lp sys 200 Dec 17 07:59
drwxr-xr-x 6 lp sys 688 Dec 9 07:58
-rw-r--r-- 1 root root 73040 Nov 20 18:37 ELP.ppd
-rw-r--r-- 1 root root 73040 Nov 20 13:15 ELP.ppd_org
Lrwxrwxrwx 1 root root 11 Dec 17 07:59 Testdrucker.ppd -> ELP.ppd
Lrwxrwxrwx 1 root root 11 Nov 19 09:56 edv2.ppd -> ELP.ppd
Lrwxrwxrwx 1 root root 11 Nov 20 15:27 tester.ppd -> ELP.ppd
```

10. Announce this new function to CUPS.

"lpoptions -p Testprinter -o document-format=application/elp"

If this is the first printer using this function, CUPS creates a new file at
/etc/cups named "lpoptions"

Now all printers of this type can be registered direct there, if they should use ELP.

12. If you need the printer name within ELP in a rule or simply as a variable, Add in rule GLOBAL this key:

GetEnvVariable=PRINTER;PRINTERNAME

Forther environment variables are described here:

<http://www.cups.org/documentation.php/doc-1.4/man-filter.html>

For OMR, please do not use CLASS as a printer name.

2. ELP Integration using the Interface Scripts method.

CUPS also supports the use of "interface scripts" as known from System V AT&T
printing systems. Just install the printer with the -i option:

lpadmin -p -i /path/to/interface-script

Note: Since all filtering is disabled when using an interface script, scripts generally
should not be used unless there is no other driver for a printer.

The content of the script can be a standard ELP command line:

/user/ELP /ELP.Linux STDIN STDOUT -d/user/ELP -c/user/ELP/convert.ini

Known “issues” when printing with Filters or Interface scripts:

The biggest problems we faced is, that the filter / Interface Script is NOT executed. This was always, because CUPS did treat the data stream in RAW mode, which means, that it is NOT passed through any filter.

Prevent printing RAW mode via SAMBA:

Printing to CUPS via UNC path, e.g. using Net Use DOS commands may cause you a headache, because the job is passed through a CUPS filter in RAW mode. In that case, simply edit /etc/samba/smb.conf and in section GLOBAL set a small # at first column in line “cups options = raw”.

Prevent printing RAW mode via CUPS-LPD:

The CUPS-LPD command: -o name=value is most often this is used to disable the "l" filter so that remote print jobs are filtered as needed for printing.

The last client had -o application=raw and the filter was not executed. So he changed it to -o application=plain and all worked fine.

TIPP: You find a lot more information about CUPS printing out in the internet!

Using HP Dazel / HP Output Server OS

To add ELP into those spooling systems is pretty easy and needs 3 quick steps only:

1. Copy ELP as described above into any directory and set the permissions, for example into this directory: /hpos/custom/stethos
2. Generate a Perl script with those 2 to 3 lines in that directory named `elp_filter.pl` and make it also accessible:

```
$printer = $ARGV[0];
$out_data = /hpos/custom/stethos/ELP.Linux64 STDIN STDOUT -
d/hpos/custom/stethos/forms -
c/hpos/custom/stethos/forms/convert.ini -pl$printer;
print $out_data
```

3. Tell the spooling system via command line, that there is a printer, who would like to use this filter:

```
pdset -cd -x" user-filter-exit-program = "{dazel-install-
directory}!/bin/perl"
pdset -cd -x" user-filter-exit-arguments =
"/hpos/custom/stethos/elp_filter.pl"
pdset -cd -+x" user-filter-exit-arguments = "{destination}!"
```
4. If you have a lot of printers, there is another way to set that filter more elegant:

- generates an ASCII file with all printer definitions

```
pdconfig -d -s -c FileName
```

- Load the file into an ASCII editor and add to each printer this definition (3 lines)

```
user-filter-exit-program = "{dazel-install-directory}!/bin/perl"
user-filter-exit-arguments = "{dazel-install-directory}!/custom/
stethos/elp_filter.pl",
"{destination}!"
```

- Overwrite the existing printer definitions by the new one:

```
pdconfig -u -d Filename
```

AS/400

End of 2003 the main functions had been ported also to the AS400 platform as a spooler extension. Due to time limitations, only the following functions had been successfully tested:

Barcode 1D and 2D, ELP Functions, Search and Replace, Trigger, Archiving

On the AS/400ELP is able to use Host Print Transform (HPT). The minimum version for the operating system is V4R5M0.

Installation:

Create the bibliotheca DIRBCD: CRTLIB LIB(DIRBCD)

Then restore the SAVF via FTP or any other toll back to this bibliotheca. For initialisation call the following commands:

ADDLIB LIB(DIRBCD)

CALL PGM(DBINIT)

The software DBINIT creates all needed directories (/Toolmaker/DirectELP400), The convert.ini has to be stored in the directory „/Toolmaker/DirectELP400/elp“

How ELP works: In order to convert the spool files, ELP uses the Exit Program of the As/400 print output software, which is addressed in the OUTQ of the printer.

The Exit Program is invoked using the following OUTQ command:

CHGOUTQ OUTQ(...) USRDTATFM(DIRBCD/DBWTREXT)

Then the printer can be started using standard methods: STRRMTWTR or STRPRTWTR.

The conversion of printing data streams is realized through this Exit Program. Previously the data has to be converted to PCL 5 via HPT. It is important, that the printer model or the WSCST object is addressed!

After the HPT conversion ELP is called and finally the data is sent to the printer.

Known problems

The EBCDIC conversion is only tested for the above mentioned module. Others may fail due to not having been tested, but it can be fixed pretty easily.

Another way is to print directly from the AS400 to a Windows Queue which has ELP installed. The AS/400 command for this is:

```
CRTOUTQ OUTQ(TEST) RMTSYS(HOSTNAME) RMTprtQ('The full printer  
name of the PC') CNNTYPE(*IP) DESTTYPE(*OTHER) TRANSFORM(*YES)  
MFRTYPMDL(*HPIII)
```

ELP and Novell™ Netware

Unfortunately *ELP* currently can't be installed direct on a Novell Server. On the other side, as Novell has implemented their own print server, it does not make sense to queue first the data stream on a local PC. In other words, for the standard Novell installation *ELP* must be installed on the local PC, but even doing this, by default the print data stream will never pass the queue with the installed *ELP* print processor.

There are two ways to force the data stream to pass the processor of a local PC:

1. Connect the port of the *ELP* queue to LPT1, 2 or 3. Then use the capture utility from Novell to reroute the port to a server queue.
2. Install on the Novell Server the LPR printing capabilities, set the port of the local queue to LPR printing and connect it to the server and the installed printer queue.

MS Windows

The software was tested as well on Windows Cluster and various Terminal Server. On Cluster server the installation needs to be done by Hand. See chapter MS Cluster Server.

Important things about the installation:

- You need to be logged on as administrator, in order to install the software!
- If other users are allowed to access *W-ELP* of the installation PC, make sure, everybody has the READ permission in the installation directory, and READ/WRITE/CREATE permission to the forms directory!
- You need the Windows Installation pack installed.
- During the installation 1 Service DLL is installed, but it is not needed to run the main *ELP* software package. *ELP* runs as a print processor and is only active, when a job is on PRINTING status in an activated queue.

It is strongly suggested to configure the email software as described later in this manual: This will enable the print processor to send out notification mails on any detected problems while processing print jobs.

W-ELP takes unless a print job is proceeded no system resources.

Update *ELP* Software on the productive system

If you have a valid service contract for ALL(!) licenses, you are allowed to update your system any time to the last version, for free.

Ask your distributor for the latest update file, download it from the Web and simply extract the files into your mail WELP installation directory.

WARNING: Before doing that, it is strongly recommended so save your complete installation.

Change the physical ELP server to a new one

The license can be transferred to new servers any time FREE OF CHARGE, if you have a valid support contract for ALL(!) licenses. If this is NOT the case, the first and even maybe the second fee will be charged:

1. A small fee for issuing a new license key.
2. If you have lost the original installation msi file, or the version is so old, that it does not support the latest windows versions, an update fee will be charged as well.
3. Optionally it is wise to purchase a new support contract for minimum a year.

It is allowed to run both servers for 2 to 3 weeks in parallel, but then ELP on the old server must be uninstalled.

Here are the steps for moving your configuration on another server:

1. Simply install the latest OR your original version (see above) on the new server, set the access rights!!!!
2. Open on the old server the forms directory. Delete all files with ending *.pdf, *.in, *.out and *.trg
3. If you have an archive directory, check if you need the files/directories in there as well on the new server.
4. Then copy the forms directory and its sub-directories completely over to the new server
5. If the queue names on the new server are identical to the old one and they already exist, go to the next step!
Otherwise open the file convert.ini in the forms directory and erase the complete rule: [ELP activated printers] with ALL REM keys below.
6. If W-ELP was installed into another directory, check that none of your ini-files have the old installation path hard coded, e.g. c:\programme\welp\forms\ can be replaced by #ELP_FORMS_PATH#.
7. Start the PPadmin Control Center software, and enter in the startup agent the license key. Then say no, no, no and exit the agent.

8. Click on the install register tab. If you have the same queue names, they all can now be activated with the information popup you get, otherwise activate the needed printer
9. You are done!

Uninstall *ELP* Software

1. Make sure the spooler service is running (other type in the DOS command prompt: 'net start spooler' or Start -> Settings -> Control Panel -> Administrative Tools -> Services -> Print Spooler), otherwise the un-installation will fail.
2. Simply go to Start -> Settings -> Control Panel -> Add/remove programs and select the "*ELP* + Queue Control" for un-installation. The uninstaller will proceed the following steps:
 - Reset printers, which are still running with 'welpprint' as print processor (switch from 'welpprint' to 'WinPrint')
 - Remove registry entries
 - Delete shortcut in Program Group/Start menu
 - Delete installation directory with program files
 - Restart spooler (first stop spooler, then start back again)
 - Delete print processor dll in system directory
 - Remove print processor 'welpprint'

NOTE: While uninstalling, the spooler is stopped and restarted (net stop/start spooler). So make sure no important print jobs are currently processed (e.g. on a print server).

Install *ELP* Software

This chapter is only for windows user. Unix user need only to add the converter and argument call like described before in a piped command line.

1. You need to be logged on as administrator, in order to install the software!
2. If other users are allowed to access *W-ELP* of the installation PC, make sure, everybody has the write permission in the installation directory!
3. Make sure the spooler service is running ('net start spooler' or Start -> Settings -> Control Panel -> Administrative Tools -> Services -> Print Spooler), otherwise the installation will fail.
4. Assure that all previous versions of welpprint *ELP* print processor are removed from the system, i.e. registry entries, 'genprint.dll' in print processor directory.
5. Start the program INSTALL.MSI, which will guide you through the installation process. The installer alters the following components on your system:
 - Create directory and copies required program files
 - Add registry entries
 - Add shortcut in Program Group/Start menu
 - Copy print processor dll to system directory
 - Add print processor 'welpprint'

If the installation fails pretty much at the end, then please check, if the program registration in the start menu was already made. If this is the case, then you may finish the installation by hand at point 6 of the next chapter.

Install *ELP* Software using a software distribution package

A special version of *W-ELP* is available, which handles silent installations. Please ask support@stethos.com for this.

Install *ELP* Software by Hand

If the installation process did not finish, then you have the chance to install the software by hand, for Microsoft Cluster Server see next chapter!. Here are the steps to proceed for normal PCs:

1. Install W-ELP on any customer PC or Laptop etc, like e.g. yours.
2. Start the REGEDIT software from the command line for example
3. Go to HKEY_LOCAL_MACHINE and Software, mark the WELP folder and export it into the *WELP* program directory
4. Copy all files from the WELP directory to the troublesome machine, into the same installation path (no blanks). Maybe with a memory stick or so or by connection PCs.
5. Start the REGEDIT and import the settings
6. Call DOS and switch to the WELP installation directory. Now comes the important second: Execute INSTALL.exe. Now the print processor must be installed.
7. Reboot
8. Maybe put PPADMIN into the start menu

Uninstall *ELP* Software by Hand

In very rare cases, it could be, that you need to uninstall the software by hand.. Here are the steps:

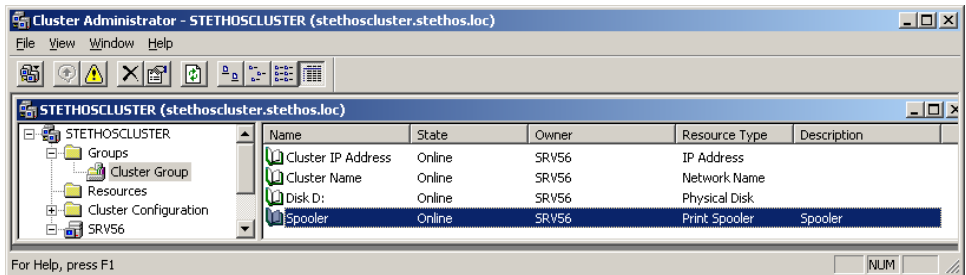
1. Stop the spooler
2. Delete at C:\WINDOWS\system32\spool\prtprocs\w32x86\welpprint.dll
3. If windows has created a copy of that DLL in C:\WINDOWS\system32\dlldcache, please delete it as well
4. Start the spooler, and maybe restart the TCP/IP print services
5. Open the registry and erase the path \ HKEY_LOCAL_MACHINE\SOFTWARE\WELP
6. Erase the c:\programe\welp directory

ELP installation on a Windows 2003 Cluster

Unfortunately *ELP* currently can't be installed direct on a Windows 2003 Cluster server (tested only on 32 bit Intel architecture)

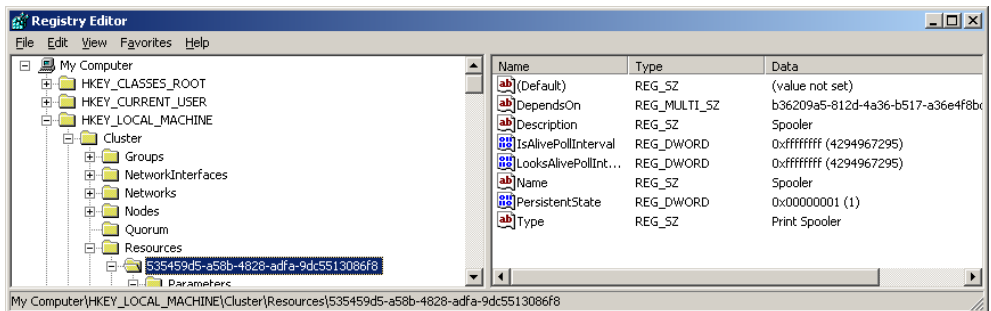
Install the same PCL5 printer driver you want to use for W-ELP on each node and on the cluster.

Make sure that you created a Spooler recourse in a Cluster Group and make sure that once a node becomes active for the spooling process this node has access to a clustered disk where the W-ELP configuration files, forms, etc. are stored. In the following this clustered disk will be named W-ELPClusterDisk.

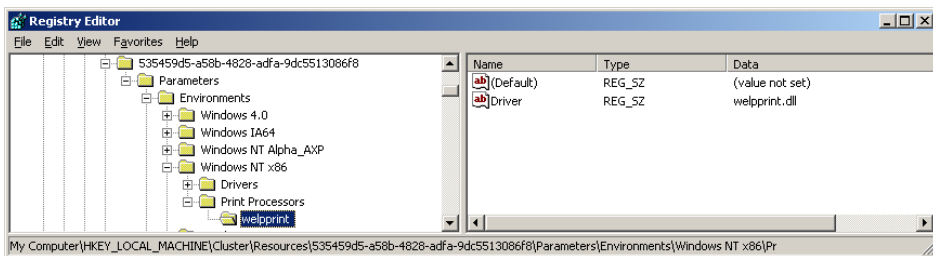


The following procedure must be repeated **per cluster node**.

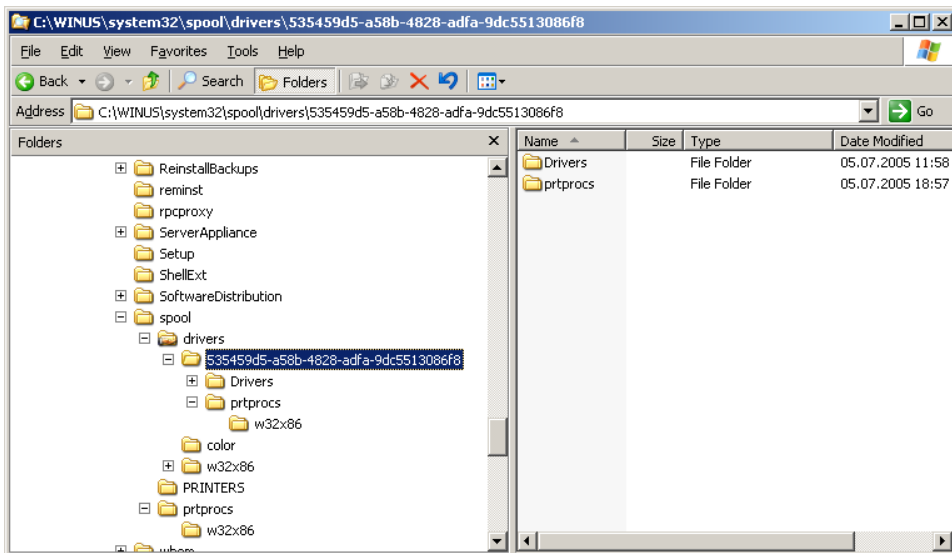
- 1) Bring one node active which owns the spooler recourse and the W-ELPClusterDisk.
- 2) Install W-ELP
- 3) Start the registry editor and locate the cluster recourse for the print spooler. Here it's HKEY_LOCAL_MACHINE\Cluster\Resources\535459d5-a58b-4828-adfa-9dc5513086f8



Create a key welpprint with this values accordingly



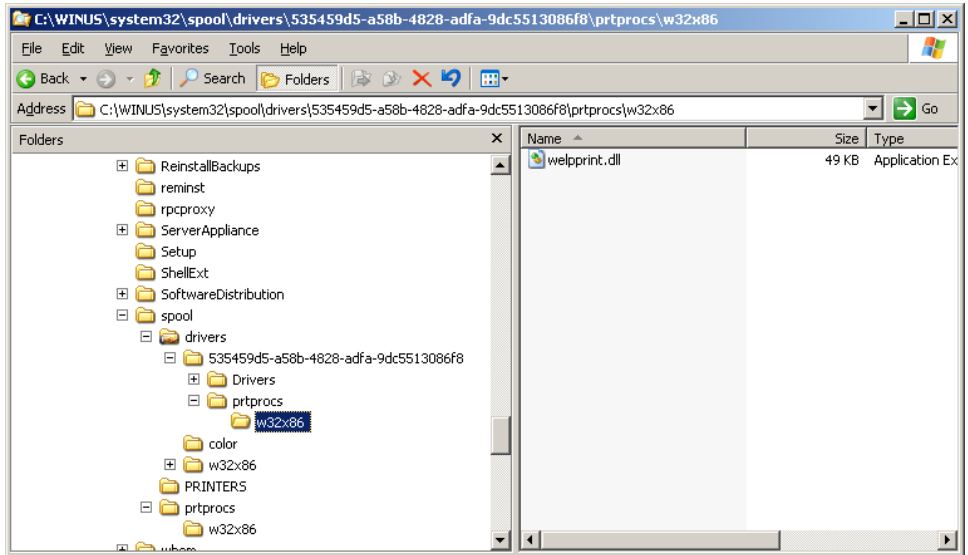
- 4) Locate the same registry hive as the clustered spooler recourse on your local system `%windir%\system32\spool\drivers`. Here it's 535459d5-a58b-4828-adfa-9dc5513086f8



Create a subdirectory `prtprocs\w32x86` within the 535459d5-a58b-4828-adfa-9dc5513086f8 subdirectory and copy the file `welpprint.dll` there (you will find it within the subdirectory `%windir%\system32\spool\prtprocs\w32x86`)

Enhanced Laser Printing

ELP for MS-Windows

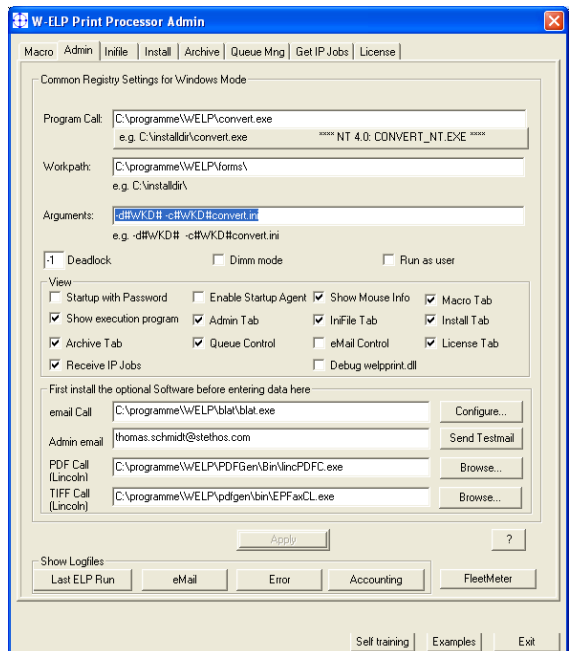


5) (must be only done once and not per node) Copy the files from the W-ELP installation directory to the W-ELPClusterDisk (e.g. in a proper subdirectory like K:\...). Make sure that the users have correct file permissions (read installation instructions on a non-clustered Windows installation for more details).

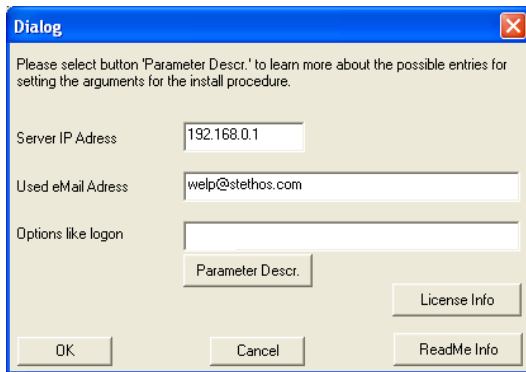
6) Start PPAAdmin and set the paths accordingly, e.g. like:

7) In order to activate ELP open the printer driver, display the enhanced tab, and turn off the **Enhanced settings**, then click on Print Processor and select **wlpprint**.

The way with PPAAdmin Install tab is unfortunately not possible



Configuration of Blat for MS Windows



Please read also the license information in the administrator manual.

With the installation of the MS Windows version of ELP, blat201 was also automatically installed, and it needs to be now configured.

Start *PPADMIN* and open the ADMIN Tab. Click on the Blat

Configure button and fill out the provided fields. Remember, no blanks are allowed in the path name.

Close the window with OK and enter into the “Admin email” field one or more comma separated email addresses in the next field and press the Apply button. Finally the installation can be tested clicking the “Send Testmail” button.

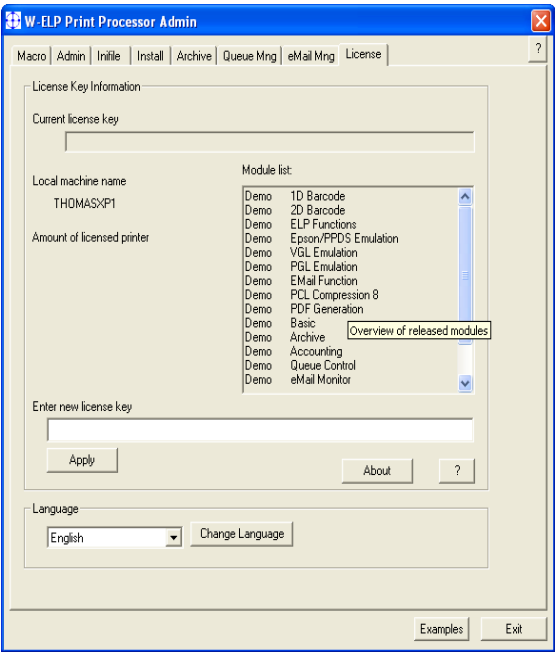
Starting from now, any important failures during the program execution will be reported to those email addresses.

Hints:

1. If anything fails, open the Parameter Description, and setup blat by hand.
2. Blat provides quite a number of command arguments, which are currently not used. On request, add them to the command line in *PPADMIN*. The full description of all commands are described in Blat’s README.TXT file.
The following arguments are currently used: filename, -to, -s and -attach.

Now it is a good time to press the top right ‘?’ and start reading. In about 30 minutes you will get an overview about the basic functionalities.

Change License Key



On the License Tab the actual license key, the local machine name and if the key is valid, the amount of licensed printers and the Module list are shown.

To change a key, enter the new value and click on apply.

Note: The key won't be checked if it is valid. If an invalid key was entered, printing on a welpprint configured printer will not be possible. A message box will inform about that.

The contact address and the actual version are shown when the About button is clicked.

Configure PAdmin's archive reprint tool on a normal user PC

The powerfull MyPrintArchive function of ELP can be used to collect, reprint, sort data streams or simply as a print library. In most cases PAdmin then needs to be installed on a local user PC.

If the installed W-ELP software is accessible from the user PC e.g. via a connected network path, skip the first point

1. Copy the following files from the installed ELP server to your local PC or into an accessible network directory. Any directory is allowed.
PPADMIN.EXE, ARCHIVE.INI, LANGUAGE.INI and all files beginning with TIPS*.* and the ones ending with *.LAN
2. Create a shortcut on the desktop and / or task menu and / or start-up menu of PAdmin.exe. Open the file explorer, right mouse click on PAdmin.exe and select: Create short cut. You then can drag this new icon into any menu you like.
3. Right click the mouse button on the new shortcut(s) and select properties. Open the register where you see the software execution call ...\\PAdmin.exe. In order to set PAdmin into Archive mode, add at the line end a blank and /A (Uppercase A!)
4. Open the archive.ini file into notepad and change the InArchiveDir to your own needs. You can either point to a shared network volume or use this definition
\\server\\sharename\\directory]
You may insert several keys for more directories. There is no difference in file handling if you use the In- or OutarchiveDir key, they are only for finding the path. You may also use the variable #USERNAME# in order to open a user specific subdirectory.
There are quite a view more possibilities to be set, even to load another ini-file for getting the archive directories names. All options are described in the file.

Once the shortcut is called, PAdmin shows up with only the Archive register.

Tipp: If the user should only be able to print all his stored files in one shot, use either a batch file like this:

```
copy /b d:\archive\*.* \\server\PrinterShareName
Del /Q d:\archive\*.*
```

Or the way described in the MyPrintArchive chapter in this manual.

You may also change the tips.ini.* files with notepad to give more company specific help to your users.

Sharing NT / 2000 / XP printers Queues using TCP/IP services (LPR)

If not yet done, install the unix print services via Control Panel – Add Software – additional file and print services – Mark Unix print services.

Then check, if in the registry the passthrough option for the service is set.

1. Start the registry editor (regedit.exe)
2. Open
HKEY_LOCAL_MACHINE
SYSTEM
CurrentControlSet
Services
LPDSVC
Parameters
3. From the Edit menu select New - DWORD value
4. Enter a name of SimulatePassThrough and press Enter
5. Double click the new value and set to 1.
6. Click OK
7. Reboot the PC in the key was added, or stop and start the spooler.

Then open the services window from windows and check if the TCP/IP Print services for LPR (Unix Printing) ... is started. If not please start.

Finally open the windows print queue, where ELP is activated, and set it to hold. Enter also a release name. if possible use for the first queue the name 9100, as this is the printer port most hosts print to.

Now change on the host the IP Address of the LPR command to the one of your PC. In order to get the PCs IP address open the dos box and enter IPCONFIG. You may also turn the printer off and change temporarily the PC IP address to the printer one. This has the benefit, that nothing needs to be changed on the host.

Once a job is now printed, it should arrive in the queue. In order to release the job turn the job holding off. If nothing arrives, the host is using another protocol.

If the client is a PC, then connect the new queue on the server using TCP/IP Port, entering the LPR protocol and VERY IMPORTANT: Activate the LPR Byte count in the port register of the printer driver settings.

If any problem do show up, please do not hesitate to send an email to the support address, see at PPAdmin ->license tab -> About information.

How to print from other Windows PC to the Windows *ELP* queue

1. Release the printer queue with the installed print processor for everybody.
Therefore call the printers properties, and release the printer by giving a useful name.
The printer queue is now ready for being shared.
2. In order to connect any other windows PC to this shared queue, open the printer properties of the local PC. Note, you need a PCL 5, 5E or 5C driver!

Select the ports tab.

Add...

Select Local Port

New Connection

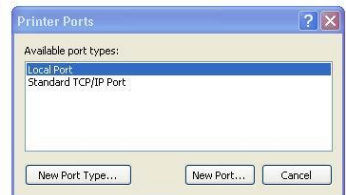
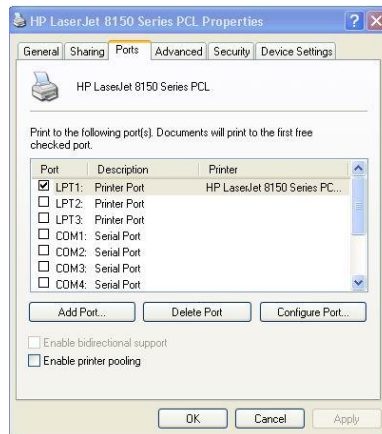
Enter the IP address and the previous given Useful Release Name

Close all Windows up to the ports window

Mark in the Port list the new generated port.

OK

Now you can
start printing
from this PC
using the
W-ELP,
installed on
any other
server.



Set the wait time for PDF conversion in the Archive menu

If in the Archive register pressing the View button the conversion from a PCL print file into a viewable PDF document takes longer than 10 seconds, maybe because of an extremely large print file, or a slow PC, a notification window will pop up.

This time frame can be freely set in 0.5 seconds steps using the registry key PDFConvWaitTime at HKEY_LOCAL_MACHINE -> SOFTWARE -> welp -> welpprint.

First steps with ELP Windows Software

Agent for first installation / configuration steps

Enter new license key: If new [demo] license is available, insert here and apply ->

Secure ELP with password (yes) ☐ Yes ☒ No

Display online help (no) ☒ No ☐ Yes

Display the self training ☐ Yes ☒ No

Active ELP for print queue:

9055grra@EMD003	Activate selected printer queue Display all printers
Adobe PDF	
Canon IR 3170C EUR PCL5c	
Canon iR8500-M2 PCL5e	
CLJ 4500 PCL 5c auf file	
CLJ 4550 PCL 5c	
CLJ 4550 PCL 5c	

Printer functions / Forms-, Paper- and Copymanagement

Select one solution out of the listed examples. If it does not fit 100% to your requirements, you may change it later

☐ SAP Unicode & Double Byte drucken ohne Hardwareerweiterung

Emulations

Select from the list your needed emulation. Only one emulation can be selected. Further emulations like PDF, TIFF, CALS, Philips can be enabled by adding the specific keys to a rule.

In order to send datastreams from Unix to MS Windows ELP queues, please install the "print services for Unix" and use the Unix LP command. For SAP use connection type U. For more information please take a look into the installation manual.

The following and more solutions can be setup by using the button "rule assistant"

- Archiving of datastreams as PDF/TIFF/JPEG etc. incl. sorting and postal optimization
- OMR marks for controlling enveloping machines
- Monitoring and reporting of all information which can be extracted from the datastreams, i.e. invoice no. or cheque amount, page counters, etc.
- Sending of eMails
- Job splitting for example into single print jobs in order to process them in the special way
- Sending of datastreams as eMail attachments

Each of these and over 100 additional functions can be activated by rules. Some of them are processed everytime, like user or queue specific rules. Others are executed just at the point in the datastream where the desired information is found (Search_). The last evaluation (Trigger_) is at the end of the datastream, just before output. Those rules have access to all gathered information incl. database queries.

Documentations:

- How to setup own forms and using them is documented very detailed in the introduction: ELP_Training.pdf
- The Q/A document describes interesting ELP scenarios
- The installation manual describes the implementation of ELP in Unix / Linux / AIX and AS400 environments.
- The user manual is focused on describing the interface of the archive and its possibilities
- The admin manual describes all functions
- SAP Unicode manual
- A presentation for management and a technical presentation

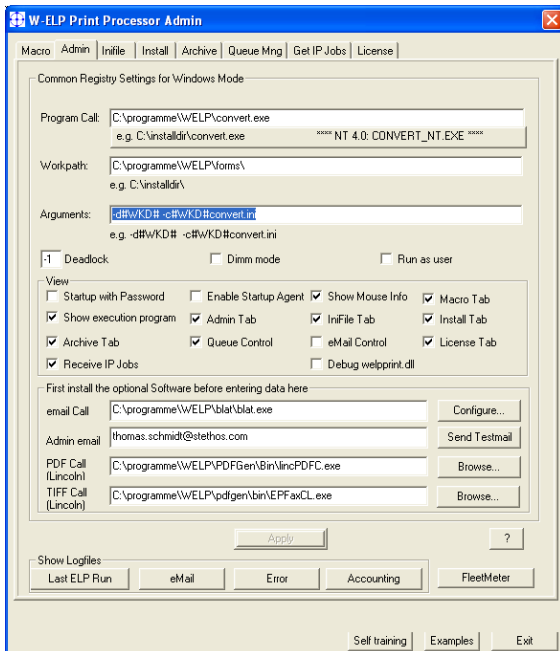
When you start your *PPAdmin* the first time a Start-up Agent is shown.

This Start-up Agent helps you to configure your *ELP* software quickly for the most common tasks.

it offers quick access to the global setup, printer activation, Forms and printer handling, SAP_Unicode and to the emulations.

The default recommendations are listed in the left column of the yes/no table.

Choose the Admin Tab



The options **program call** and **Workpath** are predefined from the installing process. You may put now the convert.exe into any other directory or rename the file. Then change the Program Call setting.

The **workpath** should lead to a directory which the spooler has the full write and read permission. The In and Out communication files to the convert.exe are stored here. The workpath should end with a '\', otherwise it will be added. In any case, Workpath can dynamically be changed using the Ini-File kesy WKDIR.

The entry may contain any additional command described in chapter "Use and test the ELP program", except IN_DATA, OUT_DATA and the -P Arguments. They are fixed provided by the W-ELP print processor.

For printing barcodes, there are no additional options needed, but for the Form Management the -d command is required, as well as the -c command for enabling ELP and other functions.

In most cases the paths of -d and -c commands are directed to the Work Path. To keep the entry short and easily changeable, the Work Path can be replaced by the command #WKD#.

As the usage of the -c command is strongly recommended, the most common used entry of the Arguments are: "-d#WKD# -c#WKD#\convert.ini".

Note: The In- and Out-file and -P# parameters are handled by default and there is no need to add them to the argument text.

As an extended option you can choose running the debug mode or not by clicking the checkbox ("show execution program"). If you chose to run the debug mode, then a dos prompt will appear and show the processes.

The number entered next to “**Deadlock**” defines the time which the *W-ELP* print processor is waiting until the *convert.exe* program, which is the *ELP* performing software, needs to be finished.

A value of minus one indicates an infinite wait time. The positive number is the wait time in minutes. Example for a value of 2: The process will either return when the *ELP* software is finished, or run into its error recovery mode after 2 minutes.

The **DIMM mode** key is default turned off. It should be set, if the *W-ELP* windows software is used to configure and emulate an printer *ELP* firmware *DIMM*.

The **Run as user** key is default turned off. Usually it is only needed to be turned ON, if data needs to be send outside of the *PC/Server* using *In/OutArchiveDir*, *In/OutPort*, the Software is physically installed on another server or any batch process. It is also needed, if applications with printer access are called via any *CALL* key. Further details are provided at those chapters. Please use always *UNC* names for addressing the directories or your software. Volume names may not work!

The **Password** key is by default enabled, and the password window is shown on start-up of *PPAdmin*. If no password is entered, and the switch is set, the password windows does not display again on start-up.

The **Startup Agent** checkbox is by default enabled, so the start-up Agent is shown on start-up of *PPAdmin*. If the checkbox is not set, the start-up Agent does not display again on start-up.

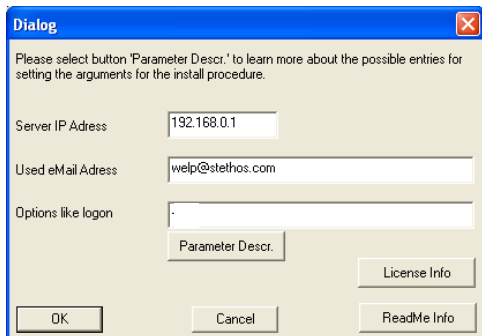
View Tabs: **Macro, Admin, Ini-File, Install, Archive, email-, QueueControl and License**: default most of those buttons are turned on, and then the described tab (register) is displayed. Turn them off, if you do or the user should NOT use them.

IMPORTANT:

Once the admin tab is turned off, the admin page will not be displayed on the next program call. So you will NOT be able to unhide the Admin tab again.

The only way to do that is to open the *PCs* registry, -> *HKEY_LOCAL_MACHINE -> SOFTWARE -> welp -> welpprint* and change the value of the key *Showregister* to 159, the default value, or 255 for the actual maximum value.

email and **PSD** Call can only be entered, after the freeware *Mail Software*, which is the case for newer



versions of the software. By clicking on the respective “browse” button you can browse your system to find the executables for the PDF or administrate the email Software.

Further information about the email Software entries can be read after clicking on the button Parameter Description-

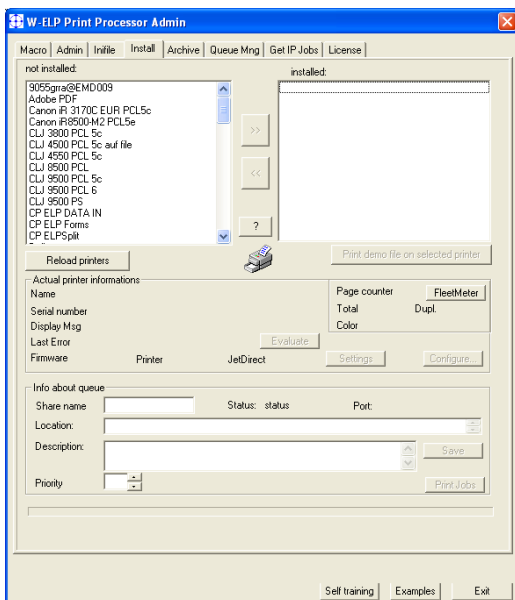
It is strongly recommended to activate the email software and enter some valid email addresses into the **Admin email** field. *ELP* will send out an email if the software fails during processing the data. These addresses are used to get emails about errors in print jobs. When you enter more than one the addresses they must be separated by comma. By clicking on TestMail, the entered email addresses must get a test mail from *PPADMIN* within some minutes.

On **APPLY** all changes of this screen are stored.

The buttons “show last logfile” and “show account file” open the corresponding file in notepad. Then you will be asked if you want to delete them. These files are normally saved in the Working directory.

The installation is now nearly finished. The last step, described in the next chapter, is to enable the *ELP* functionality within any printer driver.

Activate *ELP* printing Windows version. (not Cluster)



Start *PPAdmin* and select the Install tab.

The left window lists all installed printer drivers/queues which are using the WinPrint processor, the right list drivers/queues with all the activated *ELP* processors.

Once any entry of those two lists is marked, the port and the name of the driver is displayed below the lists, and you may now install / un-install the *ELP* process, simply by clicking on the activated direction key << or >>.

Enhanced Laser Printing

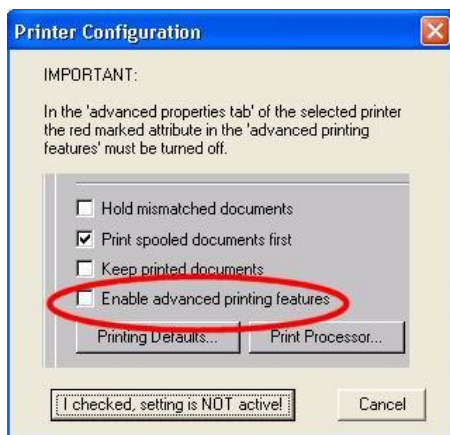
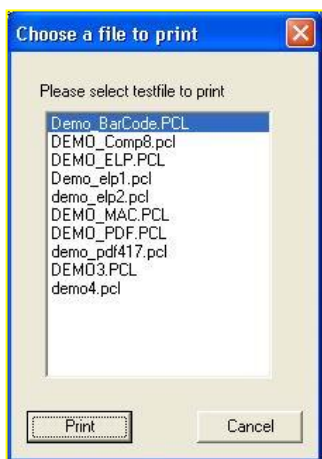
ELP for MS-Windows

Note: If no printer is listed, and there are some installed on this PC, then open direct the printer properties and change by hand the print processor to welpprint. We do know some printer manufacturer do use their own WinPrint replacements.

After clicking on >> a new window may appear, which reminds you to set the printer driver to the correct configuration.

It is important to turn the 'Enable advanced printing features' off.

Note: The licence model of the W-ELP Software for Microsoft Windows is limited to n installations. The installer Tab allows only the maximum installations of *ELP* print processors.

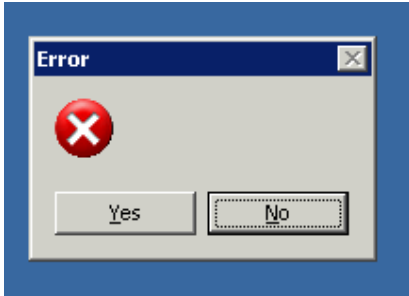


To test the installed printer click on the button “Mark printer to print demo file”. A window will appear in which a list of all available demo files (*.pcl) are displayed.

Due to licensing reasons, once a valid key is provided, the barcode functionality might be permanently turned off.

To continue we recommend to click now on the top right “?” button and start the self training.

Error message, without any text...



In very rare cases, this error message will pop up when printing from another client. This message is NOT produced by ELP, I comes from the MS Windows software itself.

Usually the problem is caused by wrong access rights. It seems that the suggested EVERYONE user rights in the WELP, WELP\forms and WELP registry settings

are not enough. Especially when the user is located in another domaine.

In that case you need to grant the user to administration rights. But ONLY for those directories.

Collect Page Counter from your network printers, FleetMeter

ELP can collect from all network printers quite some information, beginning with actual page counters and ending with any MIB information you can get out of the printer.

There are 2 ways to collect those information:

1. Default and always as the first try: Using the SNMP (Single NETWORK Management) Protocol.
2. Only if collection the page counter and the printer name fails via SNMP, as maybe the printers SNMP support is turned off or the network box is not supporting it, ELP may use on request as well the standard @PJL (Printer Job Language) commands.

In order to setup the default setting start PPAAdmin -> open the Admin register -> Click bottom right the “Page counter” -> Configuration

File name definition via ODBC mechanism

SNMP

DBQ=C:\programme\WELP\PGCount\MIB.XLS;DRIVER={Microsoft Excel Driver (*.xls)} Edit

Default: DBQ=C:\programme\WELP\PGCount\MIB.XLS;DRIVER={Microsoft Excel Driver (*.xls)}

It is possible to define or select any own database via ODBC mechanism. Further information can be found in the install manual

Table: Default Table for MIB.XLS is PRINTER_MIB

PJL

Ports to try: Default is Port 9100; Separate others with Semicolon, like 9100;9101; etc

Tried connections per port: Minimum value is 2

Wait time between each try: Minimum value is 2

Additional settings

CSV Field separator of result file:

eMail Addresses, with comma:

OK Cancel

The @PJL communication settings: This is an optional selectable way of collection the printer name and page counter if SNMP fails. Once found there, ELP will search for the printer name in the SNMP database and if the printer is not found, proceed with the “DEFAULT” printer name. See below for further info's.

The settings and their explanations of the PJJ method are:

Ports to try	The default network listener port is 9100. However, if for example you are printing via a three port jet direct box, your port named for the 3 printers could be 9100;9001;9002. Enter all port numbers separated by semicolon beginning with the most important first.
Tried connections	As the printer is maybe busy, or it takes some time him to reply, this field holds the number of times, <i>ELP</i> tries to connect to the printer.
Wait time	The time in seconds <i>ELP</i> waits between each connection try.

The last 2 numbers resumes together into the maximum time *ELP* waits and tries to connect, when the device is either offline or busy printing or when browsing a range of IP addresses, there is no printer at the requested address.

The more tries are set and the longer the wait time is, the longer *ELP* needs for analysing each IP address, which was not found via the SNMP process.

The top SNMP frame usually needs to be configured at all, unless you do not want to setup your own data base system, accessed by standard windows ODBC methods.

You can select any data base system and any table for storing the printer and their MIB information. As default the EXCEL spread sheet is selected, but you can also name any links DNS name and access the provided table.

The default ECXEL data base is named MIB.XLS and is located in the PGCount subdirectory.

If your printers are not listed in that directory, *ELP* looks for the “DEFAULT” entry, which is based upon the Hewlett-Packard printer MIB.

Feel free to add any time new MIB entries as columns. The manufacturer commits to add them as well to the default delivery file, when you this kind of information to your local distributor.

For the **CSV field separator** can be used any ASCII character, most popular is the comma or semicolon. The used character is depending upon your spread sheet calculation software default setting.

Finally if you want to use the **automatic email functionality**, enter here the email addresses, to who the result CSV file should be sent.

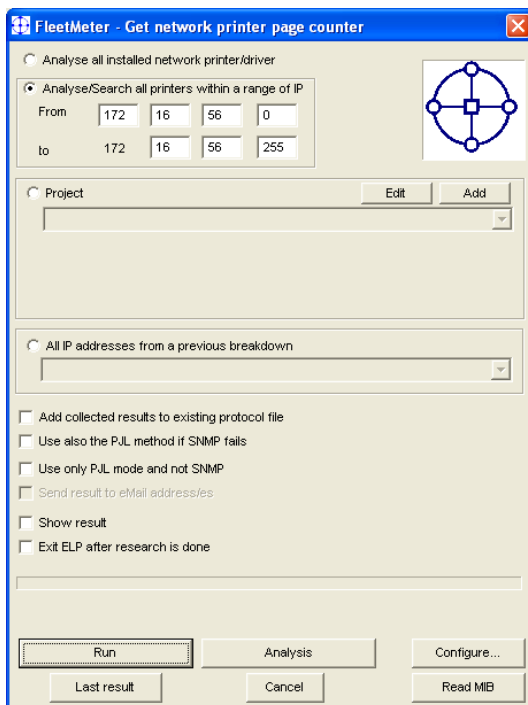
Automatic collecting Page Counters, time triggered

If PPAdmin is started with the command line switch /P it starts up with the page counter screen and performs automatically the research, using the last window settings. So in order to setup a functionality like that, proceed through those steps:

1. Start PPAdmin without using any parameter.
2. Open the admin window and setup and test the email functionality, as in most cases the results is sent out via email.
3. Call the page count option
4. Configure the system, especially the email addresses
5. Return to the page count main window and configure it once to your requirements, like the mode and all option. Obviously PPAdmin has to send the stuff by email and shut down after finishing the process.
6. Click on Run to start the process in order to test your settings and even more important to store the settings.
7. Is the result like you need it, then finally set up the time based process. Windows offer several methods to call applications time based.

The main ELP manual describes time based printing. You can use the same freeware

software System Scheduler loadable at <http://www.splinterware.com/> to setup the time based page counter functionality.



8. The final trick is to call PPAdmin with the switch /P, which uses always the last performed page counter research as the default setting.
c:\programme\welp\PPAdmin.exe /P

Software support

SAP R/2 and R/3

ELP commands can be used directly in the SAPScript form, but make sure, that you do not print using the SAP-WIN method. Another trigger method is to define in the SPAD some new print controls, which do contain the proper commands.

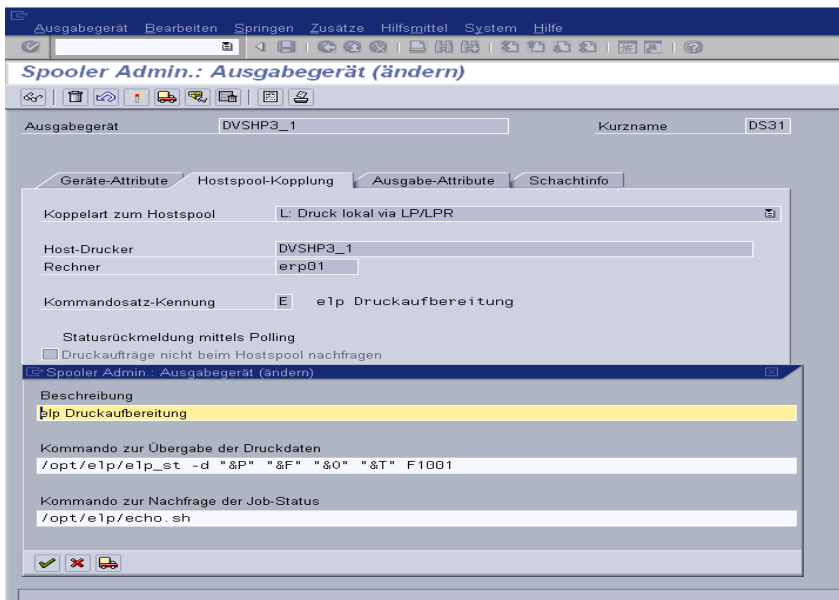
One possible method of the usage of ELP for Unix within SAP is like this:

Connection method (Koppelart) L seem to be the easiest and maybe also the best solution to integrate ELP within SAP.

Generate in Transaction SPAD a new printer, store it and call the Pull-Down Menu Edit->Command set (Bearbeiten ->Kommandosatz. A new field is opened and enter there for example an „e“ for ELP. After the double click on that „e“ a new windows is popping up, where the commands can be edited. Enter the exact same command as used in the Instance or Default-Profile. The only difference is to add to the command an „_e“.

Example: Instance profile: rspo/host_spool/print = lp -d " &P" "&F"

New command set: lp_e -d "&P" "&F" "&o" "&T"



In the last Step, generate a shell script in the search path of the R/3 systems names "lp_e", which performs the following actions:

- The input needs to be send through the ELP converter and most likely via stdout
- the real lp programme is called using the piped command, see page 19.

Here is an example of the lp_e shell script, how the above values can be passed into ELP:

```
/opt/elp/elp.HP-UX $3 STDOUT -d/opt/elp -  
c/opt/elp/convert.ini -p1"$2" -p3"$4" -p4"$5" | lp $1 $2
```

\$2 is the printer name
\$3 the print file name
\$4 the user name
\$5 the document name (Title)

Once this addon works, the *ELP* service can easily be activated on any printer within the system, as only the „e“ needs to be set via edit->command set.

Here is a list of all available parameter SAP can pass into the shell script, and there they can be passed by command line into the ELP printing process:

If the command is to contain a '&' character then this must be written as '&&'. The following replacement parameters are defined:

&C Number of copies
&D Department of the recipient
&F Name of file with the print date (including path)
&f Name of file without path
&H/// , if host spool cover page required, otherwise
&I Job name with DB ID
&J Job name without DB ID
&L Format type
&M Client of spool request owner
&m Client of print request owner
&O (SAP)Name of spool request owner
&o (SAP)Name of print request owner
&P Name of external output device
&p Path name of output file
&R Name of recipient
&S Name of SAP output device
&T Title
&t Fax number
&U Host spool cover page required (X=yes, N=no)
&Y SAP priority (1-99) 1 is the highest priority

Alongside these standard parameters the following parameters are also available for the OMS command template:

&EI SAP spool ID

&EG Confirmation group

&ES SAP instance name for call-back (if required, otherwise "-")

&ET Maximum buffer time for call-back events

&EA Maximum number of buffered events

&EP Fax recipient (future addition)

&E1 R/3 flag of LOMS

&E2 OMS flag of LOMS

&E3 R/3 flag of ROMS

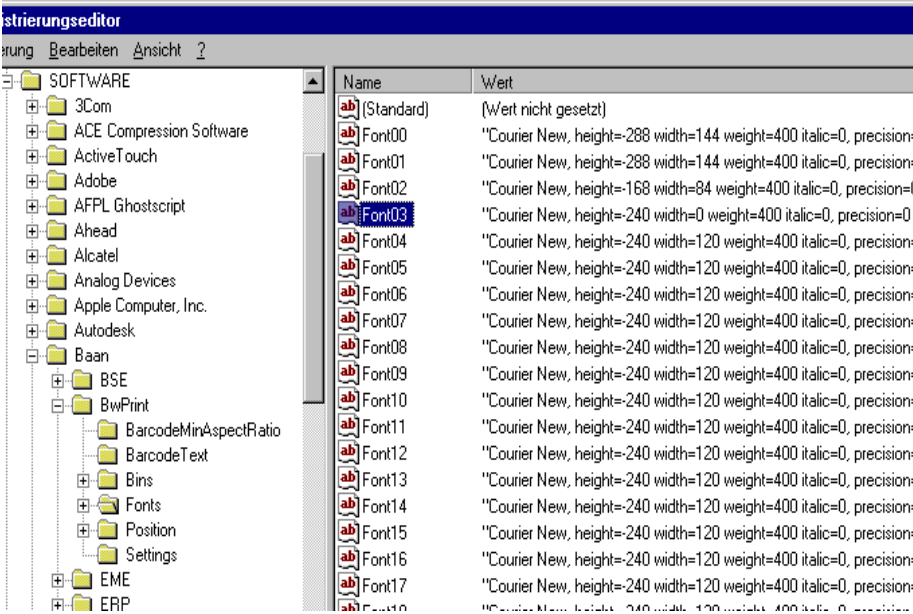
&E4 OMS flag of ROMS

Baan

For Bann under Unix there should be no problems at all. The Barcodes are integrated the standard way, using a shell script (Documentation on request). Trigger words for rules are normally found.

For BWPRINT running under MS Windows, the situation could be for Trigger Words different. They are maybe not found, as the driver generates the text fully graphically.

A client found a way around that, through setting the with parameter in the font description to 0.



Microsoft Word (also mail merge)

Usually the *W-ELP* Solution is used in conjunction with Microsoft Word for reprinting invoices or fast mail merge printing. In both cases, insert the commands using the print field (German Druck).

Insert -> Field -> Search in the right list box for Print/Druck and mark it. Then enter the command in the field below like this:

For *ELP* Commands: PRINT "<<K3;C1.....>>"

For macros: PRINT 27"&fs1000y3x1S"

The best way is maybe to save this document as a dot file. If you have the need to change the already defined command, turn the field function to visible at the Extras -> Options menu.

Another handicap is stapling mail merge documents, as you can't staple from this function every record. But in most cases this is the client wish. Using *ELP* this is pretty simply to setup:

1. You need two queues, the QA one you send the data to, the QB one you really print. The data will be sent from QA to QB. Please set for both queues the port to the printer.
2. QB needs to have a share name -> use the printer Properties mechanism to setup a share name with maximum 8 characters, like *ELPEXIT*
3. Activate QA with the *ELP* printing process. (Install register)
4. Open the ini-file tab and add a new rule:
 - Add Section, double click on the QA name (close the windows)
 - Mark the section and click on ADD Keys
 - Open the Distribution keys
 - Double click on OutPort
 - change its value for example to: *#PCNAME#ELPEXIT*
 - OK
 - Open the Miscellaneous keys
 - Double click on the NoPrinting key
 - close windows
 - Mark in your new section the new inserted key NoPrinting and turn it on.
5. Open your mail merge document and insert like described above the following print field on the LAST page: PRINT 27 "s-997Z".
For further information see chapter distributed printing.
6. Finally print the mail merge document using the mail merge printing function, but do not forget to set the printing properties to stapling.

Other MS Windows software packages

On any problems that searched or triggered rules for jobs coming from MS Windows drivers are not executed please read Q20 in the QA document, which can be found in **START – Program – Enhance Laser Printing ELP - Manuals!**

Other Software packages

If you can't find a solution in the *ELP* or Example sections, then please contact the support address (PPAdmin ->License Tab ->About) for further help. See last page for ways to trigger any *ELP* functionality.

In any case mostly ELP functions are activated in a way, that no changes need to be made at all to the data stream. See page 90 for further details.

Localization

The PPAdmin control centre can be localized in any language. The manufacturer is more than happy, to receive your localization text, in order to add it to the full released product.

Here are the steps to proceed:

1. Tell the PPAdmin software that there is a new language available
 - Open the file LANGUAGE.INI located in the program directory into an ASCII Editor, like notepad.
 - Add an new section with a new unique number, e.g.2222.
 - Use the key “name” to teach PPADMIN the name of the new language
 - The key Extension defines a unique file extension for your language, e.g. .my
 - Save the file
 - Start PPAdmin, and select your new language at the License Register, as the result, English will be used as the files are still not translated
2. Turn the PPAdmin user interface into your language
 - Open the file 1000.LAN located in the program directory into notepad.
 - Store it to a new file, named with the previous defined new unique number and extension “.LAN”, e.g. 2222.lan
Check if notepad did add the extension .txt. Yes, then rename and reload the renamed file into notepad.
 - Now translate the text, every line starts with the text index number, followed by a “ and ended with a “.
 - You may store your results any time, start PPAdmin and see the results.
3. You may also translate the PPAdmin keys for the ini-file editor
 - Open the file KEYDATA located the program directory into notepad.
 - Store it to a new file, named also KEYDATA bit add the extension you previously defined in the language.ini file, e.g. KEYDATA.MY
Check if notepad did add the extension .txt and maybe rename and reload the renamed file into notepad.
 - Now translate ONLY the key descriptions
 - You may store your results any time, start PPAdmin, ini-file register, Add key, click on the key and see the results.
4. You may also translate the ELP_Training /ELP_Training2222.pdf) and the tips.ini (tips.ini.my) files.

Demo file descriptions

All provided demo files can be loaded into any ASCII editor, like DOS EDIT or Microsoft Word. However, as the file does contain PCL 5e commands, they **CANNOT be printed out of a windows application**. They need to be sent directly to the printer or to a printer queue. See the installation chapters for further information.

Barcode_1D.pcl	Prints a huge list of barcode samples
Barcode_Overview.pcl	Prints samples of barcodes and explains how they can be setup and configured
Barcode_2D.pcl	Prints a <i>ELP</i> Demo Page of all implemented 2D Barcodes
ELPStatusPage.pcl	Prints a <i>ELP</i> Demo Page and gives some information about error logging.
Invoice .pcl	Prints an example of how invoices can be duplicate with watermarks etc.
LetterHead.pcl	This Demo Page demonstrates how to print automatically forms, using <i>ELP</i> command in the data stream
PCL Macro Call.pcl	This Demo Page demonstrates how <i>ELP</i> can replace a printer Flash DIMM or hard disk for forms and/or font management, right away, without any changes to the PCL macro commands.
Trigger.pcl	This example demonstrates how to print automatically forms, using an <i>ELP</i> command, which is triggered by some information found in the data stream.

In the forms directory several ini-files can be found, they provide examples for:

autoprint.ini	Example how to print on every printed page the proper watermark / company letter head etc. depending upon page size and orientation. The forms must be generated and are not part of the demo.
Example.ini.pcl	Configuration file for some provided examples.
Invoice .ini	Configuration file for some provided examples.
MyPrintArchive.ini	Configuration file for some provided examples.
Trigger.ini	Configuration file for some provided examples.
Volvo.ini	Configuration file for some provided examples.

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Technical support

For questions, inputs, additional support or any other reasons, please contact your local distributor. The address can be found in the info box with PPADMIN at the license register.

Also you may have a look at:

1. The Question and Answers document located in the Manual section of the program start selection: “Enhanced Laser Printing ELP”
2. Chapter examples the administration document
3. If you need personal help, please contact your distributor listed in PPAdmin’s license tab -> info box.

Thank you for looking and maybe even using our product.